

## USER MANUAL

**6 A. Fitting the Broach**

**Raise the rack & insert the support pin**



**Loosen the top clamp retaining screws and withdraw the top clamp a small amount**



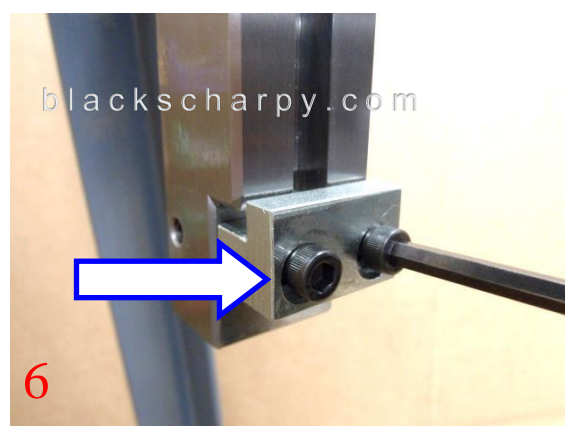
**Note: top clamp can be removed and rotated 180° for different broach types**



**Top clamp position for C & H type broaches**



**Top clamp position for N & JS type broaches**



**Lower the rack and remove the bottom clamp screws**

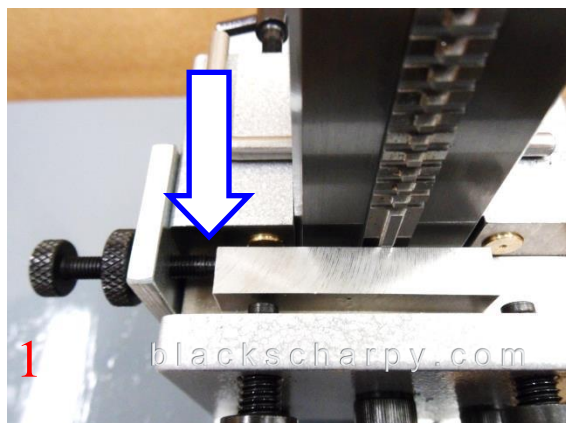
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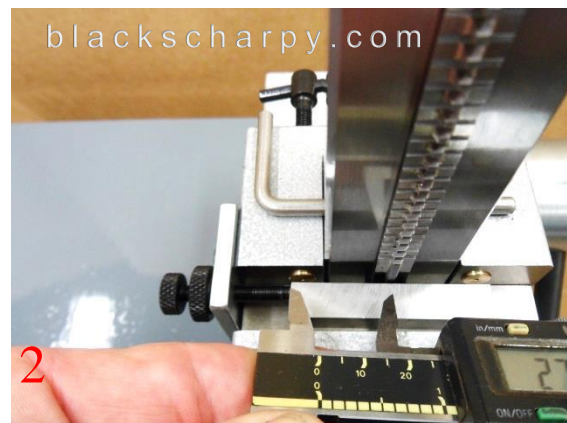
**Bottom clamp removed****Slide the broach into the groove in the rack****Push the broach upwards until it is located in the top clamp****Fit the bottom broach clamp****With upwards pressure, tighten the bottom clamp screws****Raise the rack and insert the support pin, then tighten the top clamp screws**

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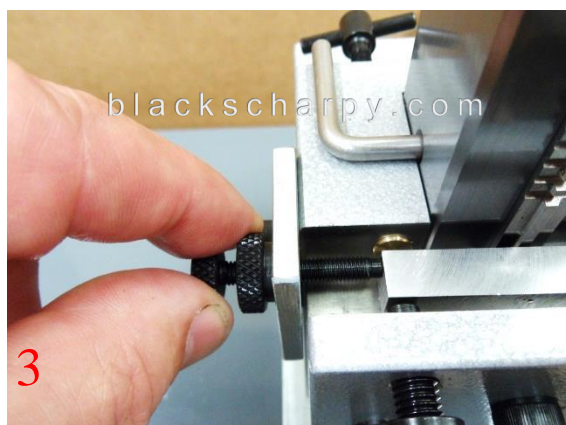
## USER MANUAL

**6B. Setting specimen Axial Position**

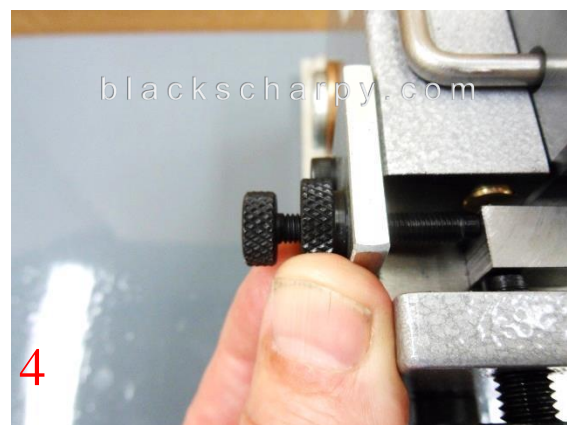
**1** Load 10mm specimen into clamp assembly so that the specimen is contacting the axial adjusting screw



**2** Check axial position and broach a specimen



**3** Check axial position and re-adjust position if required



**4** Always tighten the locking nut, so securing the axial adjusting screw position

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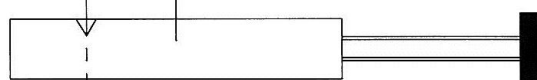


## USER MANUAL

CUSTOMER TO CHECK AXIAL POSITION,  
WITH THEIR OWN EQUIPMENT**Notch to left of specimen centre line, by say 0.010"**

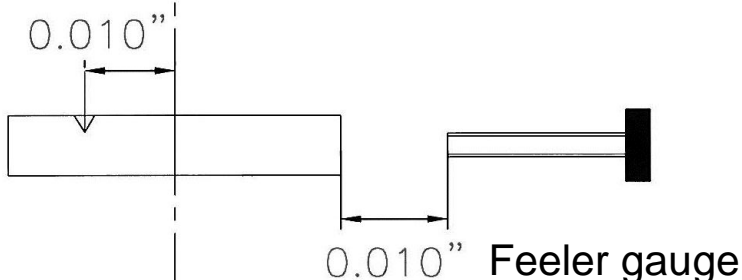
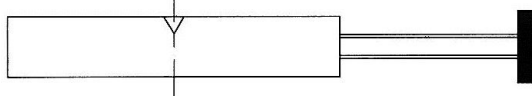
1. Initial notch position

0.010"



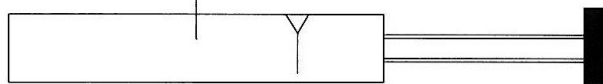
Adjusting screw

2. Unclamp specimen  
3. Move specimen using  
0.010" feeler gauge  
4. Clamp specimen

5. Reposition adjusting  
screw**Notch to right of specimen centre line, by say 0.010"**

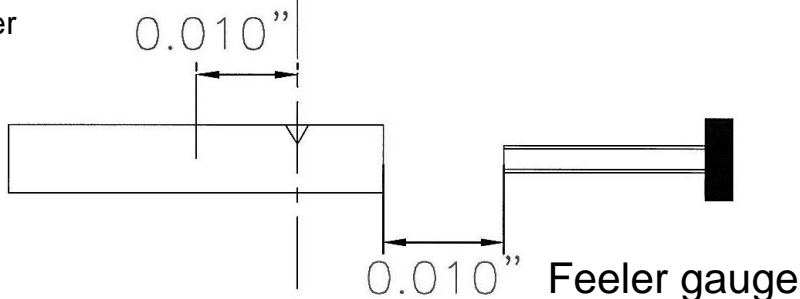
1. Initial notch position

0.010"

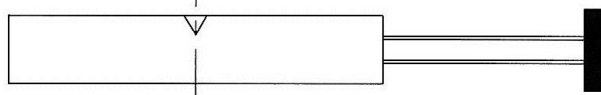


Adjusting screw

2. Reposition adjusting  
screw using 0.010" feeler  
gauge



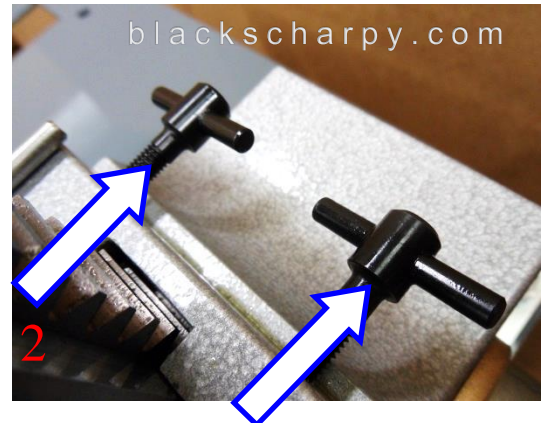
3. Unclamp specimen  
4. Move specimen  
5. Clamp specimen

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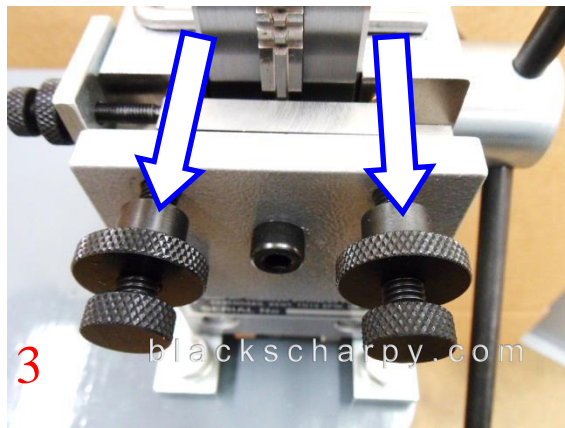
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**6C. Setting Broach Depth**

**Raise the rack and insert the support pin**



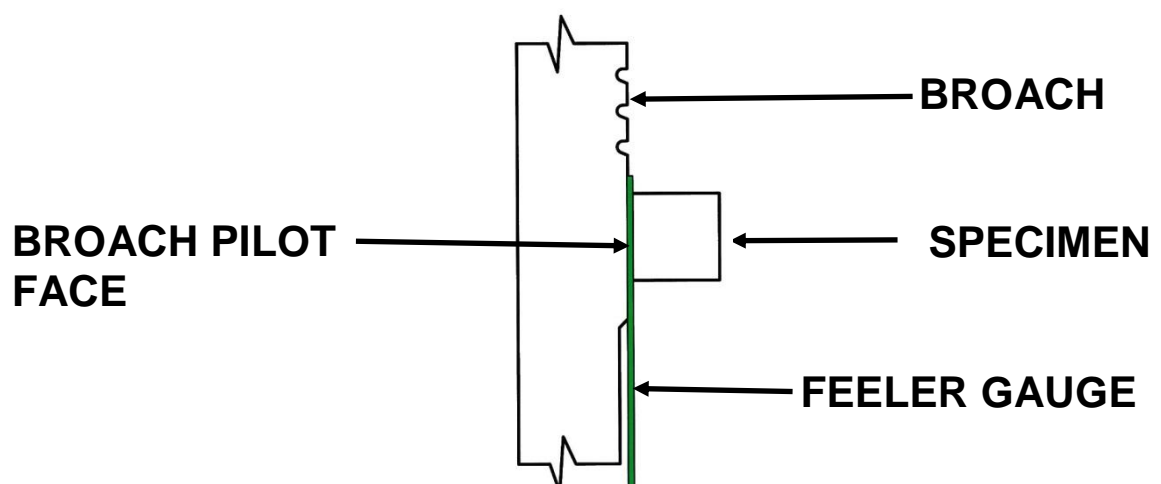
**Back off the clamping screws**



**Back off the stop adjusting screws and locknuts**



**Load the specimen**



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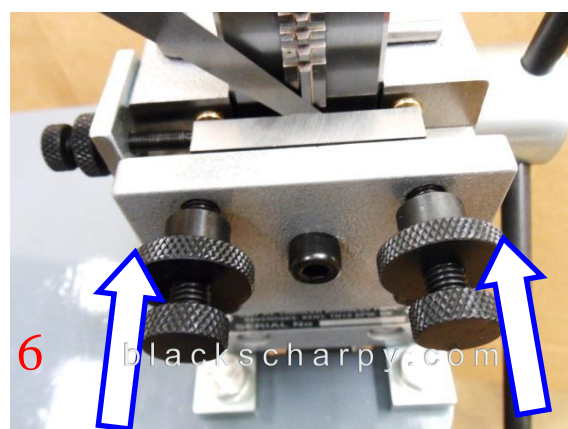
**Table 1**

## USER MANUAL

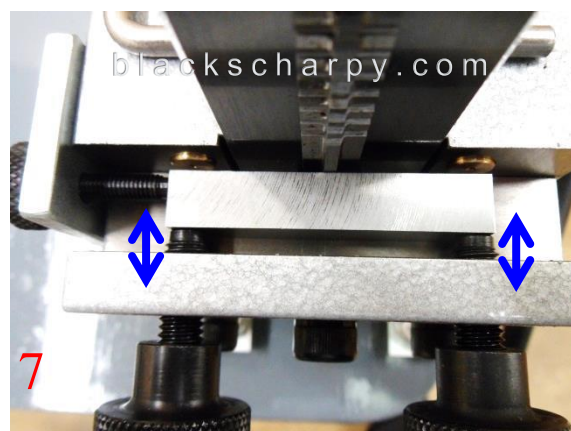
NOTCH	BROACH TYPE	BROACH	FEELER GAUGE THICKNESS
2mm 'V'	C	CNB30-027A2	0.005"
2mm "U"	P	CNB30-006A2	0.016"
2mm 'U'	N	CNB30-005A2	0.055"
3mm 'U'	N	CNB30-005A2	0.016"
5mm 'U'	JS	CNB30-004A2	0.005"
(2 Cuts)			1st CUT
0.13"/3.3mm "V"	H	CNB30-002A2	0.004"



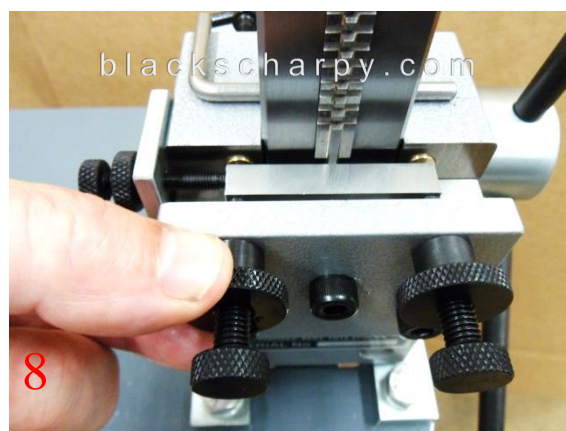
**Set feeler gauge thickness as in table 1 and place between the broach pilot face and the specimen face**



**Advance the stop adjusting screws, so that the feeler gauge is a sliding fit**



**Ensure the stop adjusting screws are equally adjusted**



**Tighten the stop adjusting screw locknuts**

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**Tighten the clamping screws**

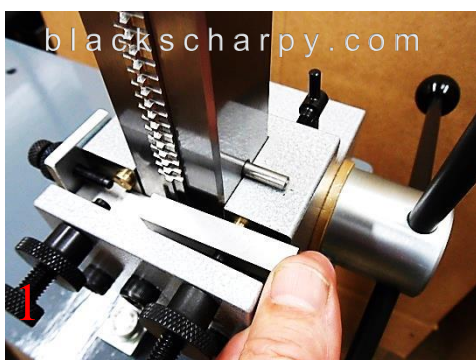


**Recheck the feeler gauge is a sliding fit**

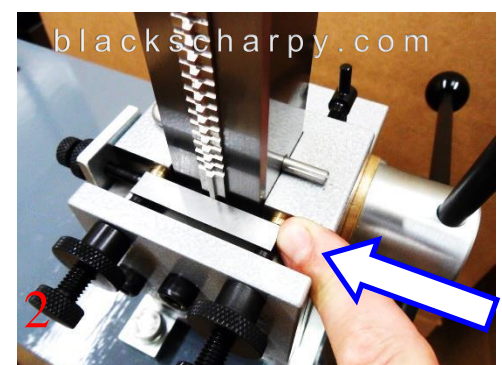


**If necessary readjust the stop adjusting screws until the feeler gauge is a sliding fit**

### **6D. Broaching Specimen**



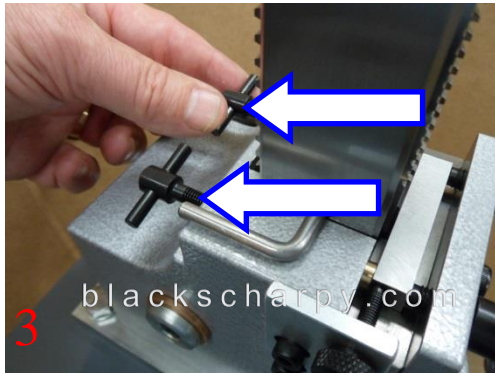
**Load specimen**



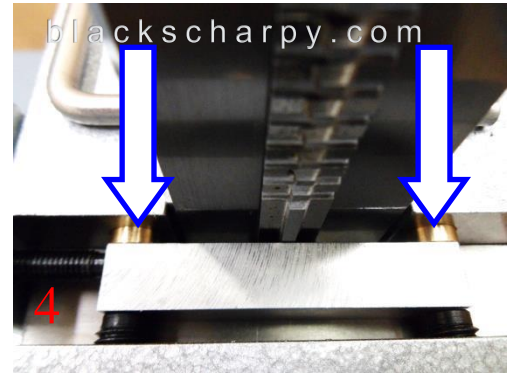
**Push specimen up against the axial adjusting screw**

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**Clamp specimen using clamping screws**



**Clamping pins securing the specimen**



**Apply cutting oil to the broach teeth, using brush supplied with machine.**



**Hold handle & remove rack supporting pin**

**We recommend RTD metal cutting liquid**



**Rotate the handle at an even rate to cut the notch**



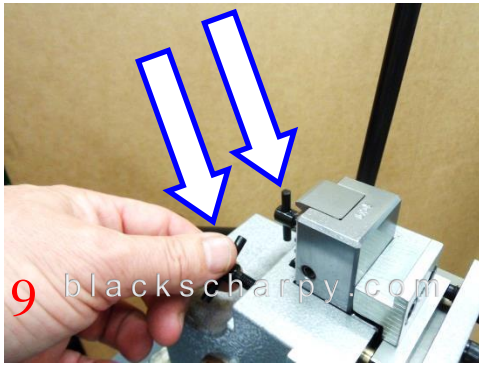
**Stop when the broach has cut the notch and the top clamp has come to rest on the specimen**

**Note: To prevent damage to broach teeth always remove specimen BEFORE raising the broach**

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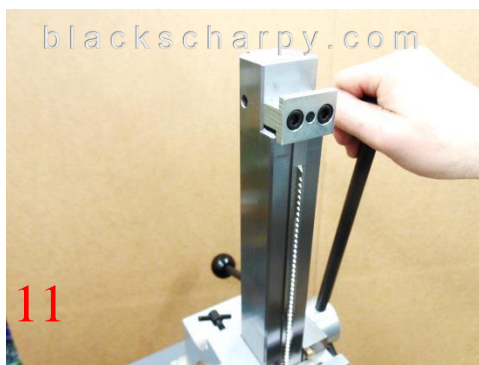
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**Release the clamping screws, raise the rack 1mm and remove the specimen**



**Specimen broached**



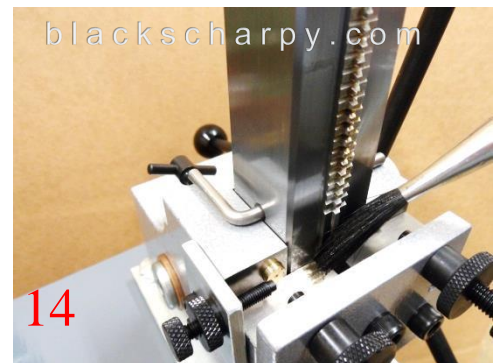
**Raise the broach**



**Fit rack support pin**



**Clean broach teeth using wire brush supplied with machine, ensuring cuttings are removed from teeth gulley's**



**Thoroughly clean clamping area using brush supplied. The machine is now ready to cut next notch**

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**6 E. Adjusting Depth of Cut****Check notch depth****Adjust the feeler gauge size, by the change in depth required****Note:**

**If the depth of notch needs to be increased, reduce the feeler gauge size.**

**If the depth of notch needs to be reduced, increase the feeler gauge size.**

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**6 F. JS BROACHING, 5mm U notch**

**1st cut. Use feelers as in Table 1 to set the broach depth**



**1st cut completed, producing a 3mm deep notch**

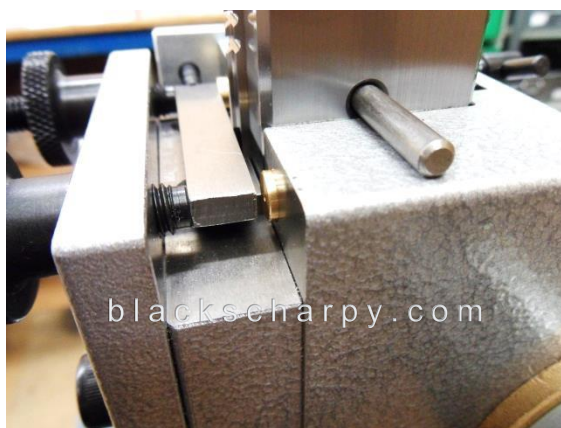


**2nd cut. Place the 2mm packer, supplied with the broach, behind the specimen to produce a 5mm deep notch**

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**10 G. SUB SIZE SPACER (OPTION)**

**For 10mm square and 10 x 7.5mm sub-size specimens, NO SPACER is required.**

**For 10 x 5.0mm sub-size specimens, SPACER CNB35-033A4 is required.**

**For 10 x 4.0mm sub-size specimens, SPACER CNB35-030A4 is required.**

**For 10 x 3.3 and 3.0mm sub-size specimens, SPACER CNB35-029A4 is required.**

**For 10 x 2.5mm sub-size specimens, SPACER CNB35-032A4 is required.**

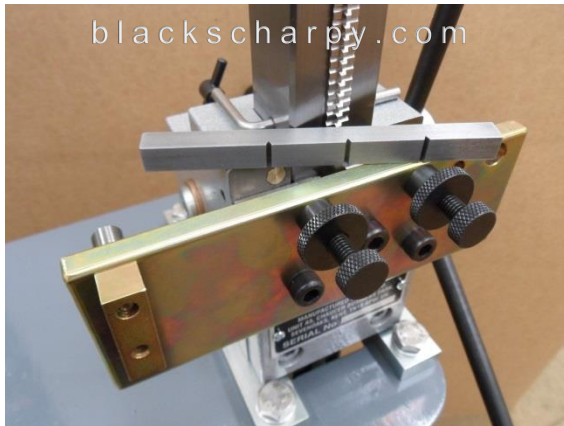
**Fixing the spacer**

The spacer is held in place by 2 countersunk slotted screws. If the spacer is removed to broach 10mm square or 10 \* 7.5mm subsize specimens, secure the 2 off countersunk slotted screws in the fixing holes, to prevent the broach cuttings from entering the holes.

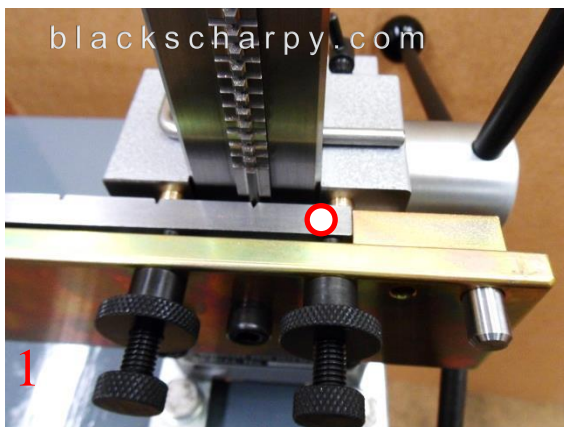
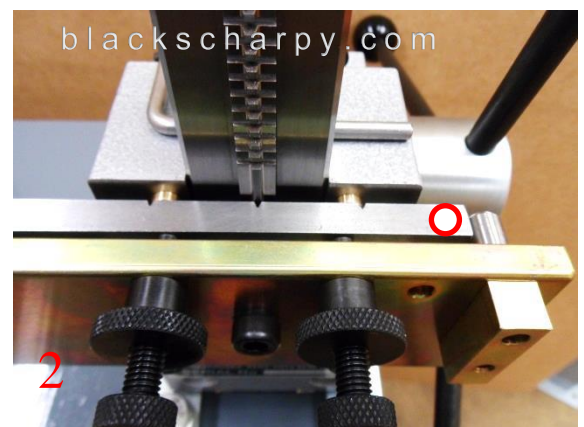
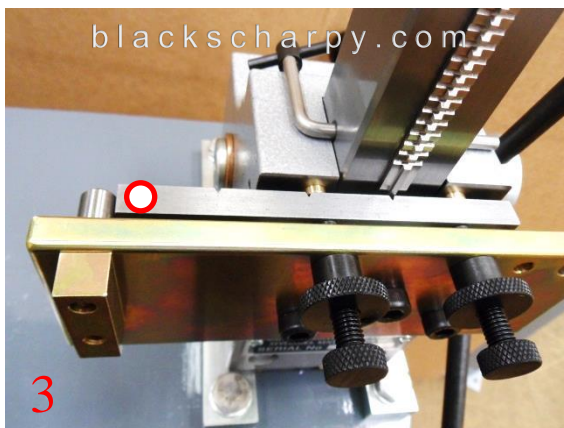


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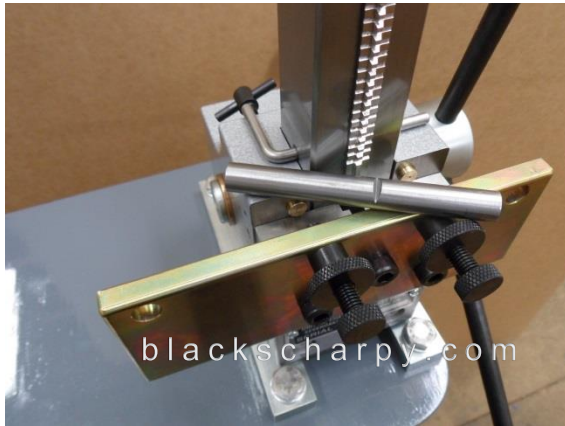
**10 H. MULTI NOTCH (OPTIONS)**

**The multi notch attachment is normally fitted at RJW Ltd., but can be fitted by customers who have an engineering department**

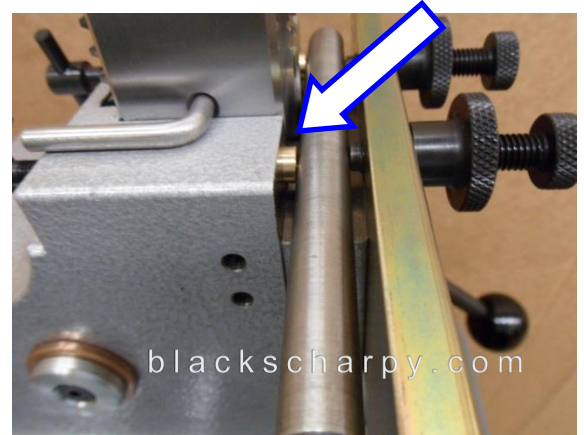
**10mm square multi notch specimen****Broaching 10mm Square Multi Notch****Broaching 1st notch****Broaching 2nd notch****Broaching 3rd notch**

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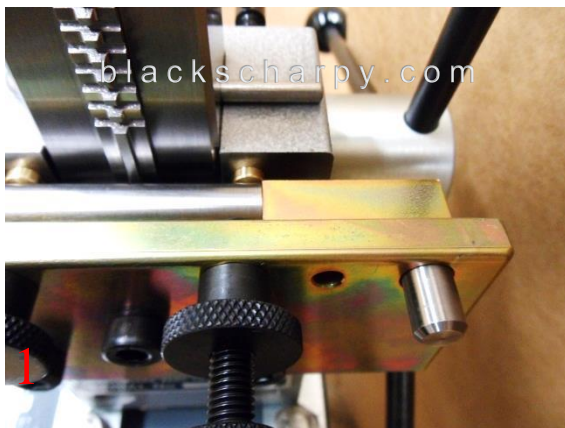
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**Broaching 0.45"/11.4mm Round Multi Notch, with "H" broach**

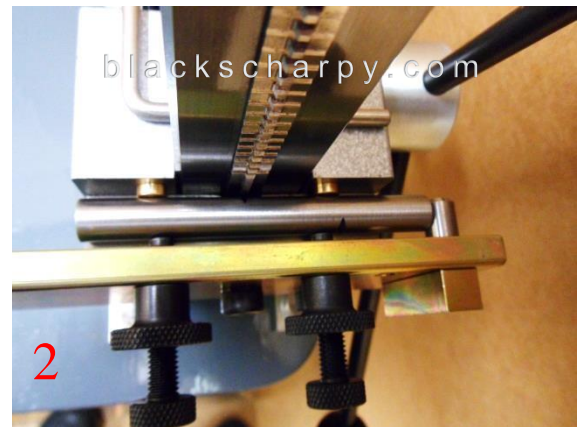
**Round multi notch specimen. Angular orientation of notches must be judged by eye or scribed lines.**



**A round specimen firmly clamped**



**Broaching 1st notch**



**Broaching 2nd notch**

**Note:**  
**Up to 3 notches can be produced in square or round specimens, at a 28mm pitch**

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